GeneSat-1 Days 16-18 Mission Operations Summary: T = Launch + 17 days, 17 hours

C. Kitts, 1/2/06

No contacts were run on 1/1/07 given the holiday. Two contacts were executed today at ~ 1925 and 2100 PST. The ops team ran standard state of health procedures, and then used the remaining time to gather high-resolution solar panel current data from the past several days as well as to catch up on low-resolution post-experiment payload data. The command channel success rate for today's contacts was ~37%.

Satellite health remains nominal. Payload temperature is holding steady at its set point of 25 degrees C, with sensor values in the 24.00 to 26.98 deg C range. Payload pressure is 14.441, and humidity is 92.063%. Bus power is nominal (with battery voltage in the 8 to 8.3 V range during sunlight), there have been no CPU resets, and temperatures are as expected (the external payload enclosure temp is ~ 19.13 deg C, and solar panel temps early in eclipse are ~ 14 to 15 deg C).

Ground segment remains functional and nominal with the exception of a) the SRI antenna mesh damage caused by the severe windstorms on 12/26-27/06, and b) occasional known glitches in the operation of the SRI antenna:

- Dish maintenance to repair this damage is currently being scheduled for this week. A boom lift will arrive on site tomorrow morning (1/3/07), and an SCU student crew has been identified to implement the majority of repairs (in an attempt to keep costs low). Weather permitting, we expect the repairs to be mostly done by the end of the week (bad weather is expected for Thursday).
- A known (but previously unseen by our crew) glitch occurred during the first contact such that the programmed track had to be terminated prior to being able to command. The glitch involved a timing offset that appeared in the SRI control software. Upon terminating track, the crew practiced manual tracking which was successful enough to hear the beacon but not accurate enough to attempt commanding. After the contact, the crew tried to reproduce the glitch by running a simulated contact at the original pass time – the glitch could not be reproduced, and all troubleshooting checks (e.g., GPS time code, trajectory angle file, etc.) showed that everything appeared nominal. Fortunately, the glitch occurred during the first contact, which was a very high EL contact that would have required track termination prior to zenith due to AZ servo rates that exceed the station's spec (and which are dangerous to apply); accordingly, only about 3 min of contact time was lost due to the glitch.

The ops team continues to practice telephone protocols with distributed team members in preparation for a smooth transition of the control node to non-SRI locations.

Day 18 Mission Operations Team: Mike Rasay – command channel operator, Chris Kitts –telemetry analyst and beacon channel operator. Giovanni Minelli – tracking operator.